Fleet Synthetic Training

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Report Documentation Page

Form Approved
OMB No. 0704-0188

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
JUL 2010		**00-00-2010 to 00-00-2010**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
Fleet Synthetic Training	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **United States Pacific Fleet,PACFLT N71,Pearl Harbor,HI,96860-3131**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES
Research & Education Summit, 13-15 July 2010, Monterey, CA

14. ABSTRACT

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT **unclassified**	b. ABSTRACT **unclassified**	c. THIS PAGE **unclassified**	**Same as Report (SAR)**	**11**	

Science Required to Advance the Training Art

- The Training Art is Codified
  - Fleet Synthetic Training (FST)
    - Integral to Navy Training, and
    - Joint Training, and
    - Partner Nation Training (Bilateral and Multilateral)
- The Concept is Simple
  - Distributed “Integrated Training”
    - Connect from Pier Side or Home Base
    - Training Audience Connected Across the AOR(s)
- The Implementation is Complex
  - Models and Simulations among…
    - Other Models and Simulations
    - Networking / Training Systems / Combat Systems / C5ISR
  - Myriad Architectures
    - Navy Continuous Training Environment (NCTE), and
    - Joint Training and Experimentation Network (JTEN), and
    - Others (Agencies / Partner Nations)

The Fleet Needs Your Insights and Discoveries

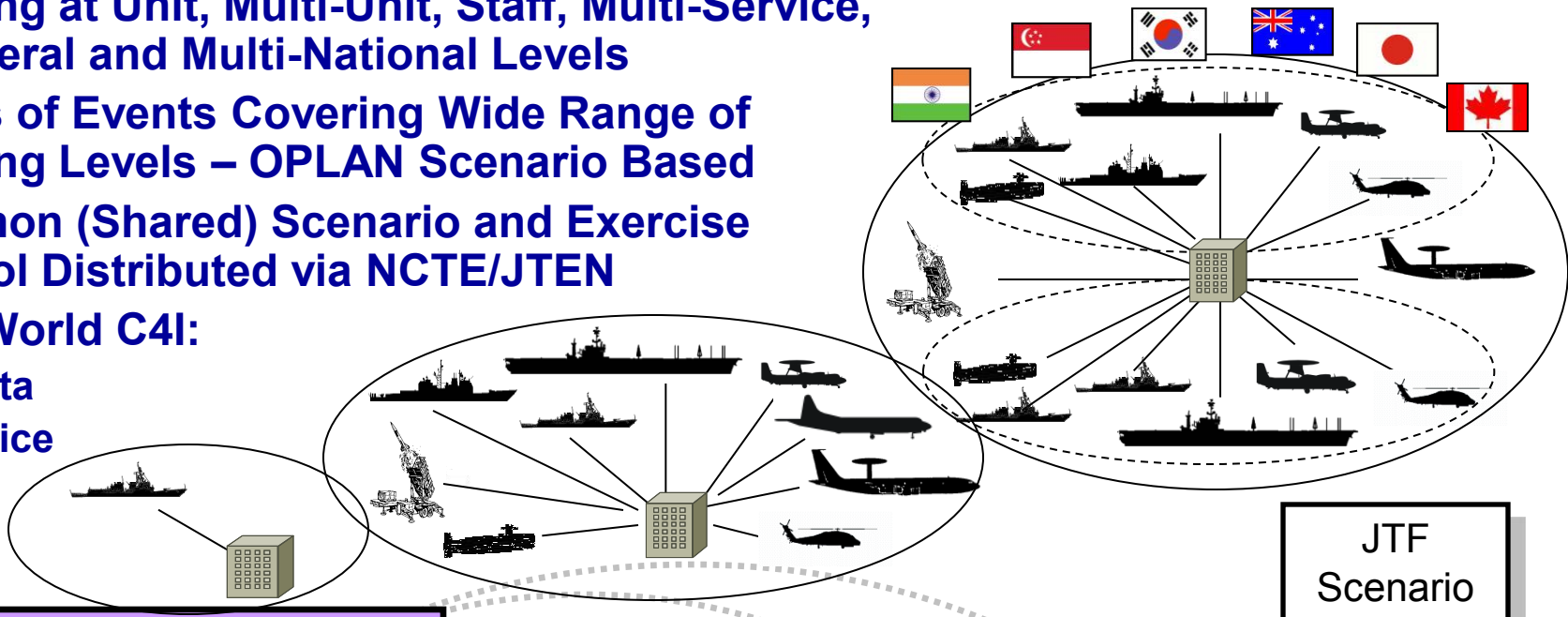
Many Challenges

1. DIS-HLA future
2. Virtual to live radios and back - how to integrate the LVC world
3. Missions that have no live training - BMD
4. Sharing Common Databases
5. Solutions for cross domain information sharing
6. Fidelity: Good enough? What must be as real as real? Break even?
7. How and why for merging live and synthetic
8. Scheduling among multiple players
9. Break even point for expansion (own Nation and/or Partner Nations)
10. Hard enough explaining synthetic training to Partner Nation, but how support
11. Non-kinetic in synthetic training
12. Balancing small but important (counterpiracy) with big and important (ASW/BMD)
13. If everyone can connect, how many separate events make sense
14. Viability and/or inevitability of synthetic environments
15. Configuration control among constantly evolving capability improvements

Details Regarding These and Other Possible Thesis Topics in Backup Slide and by Contacting Tactical Training Group Pacific

Fleet Synthetic Training (FST)

- Training at Unit, Multi-Unit, Staff, Multi-Service, Bi-Lateral and Multi-National Levels
- Series of Events Covering Wide Range of Training Levels – OPLAN Scenario Based
- Common (Shared) Scenario and Exercise Control Distributed via NCTE/JTEN
- Real World C4I:
  - Data
  - Voice



Partner Nation Joint Forces

Partner Nation Navies

US Navy — Unit — Warfare Commander — Strike Group — Strike Force — JFMCC

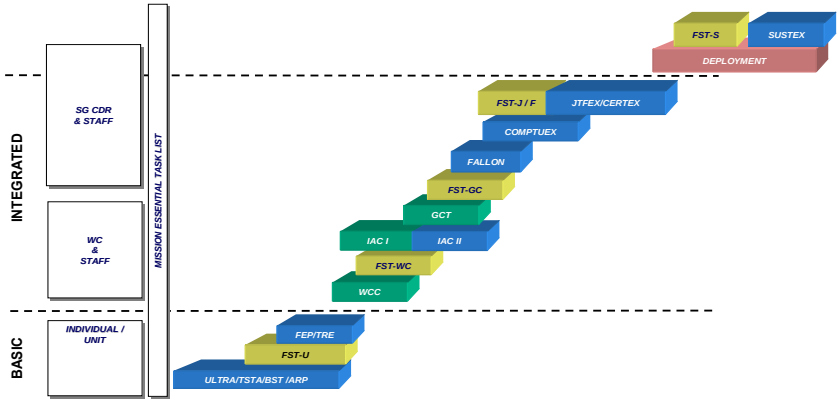
US Joint Forces

JTF Scenario

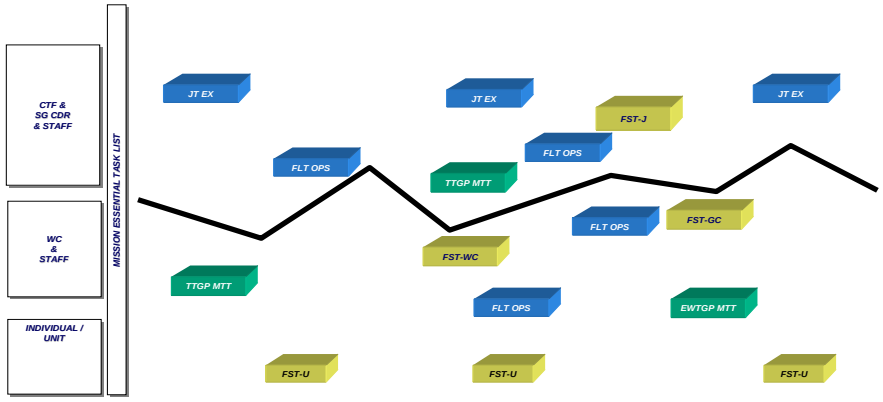
Not Just Navy – JFCOM Accredited

FST Integral to the Fleet Training Continuum

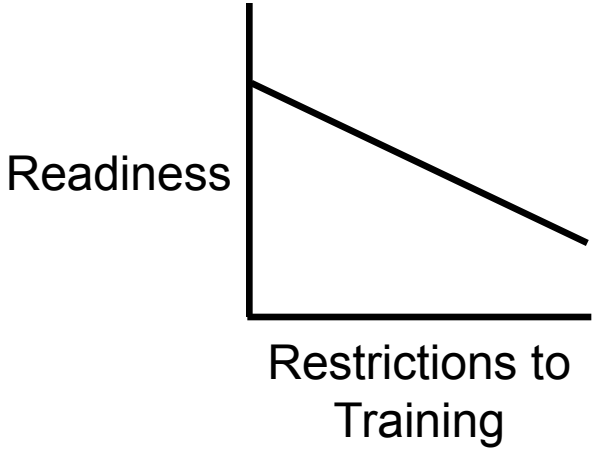
Notional Strike Group Fleet Response Training Plan (FRTP)



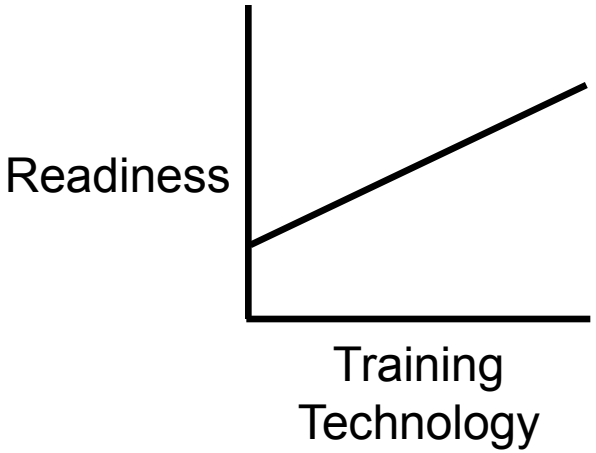
Notional Seventh Fleet Training Plan (7FTP)



Why We Believe in Fleet Synthetic Training



Encroachment
Environmental issues
Weapons Effects
Distance Between Home Ports
Cost of Fuel



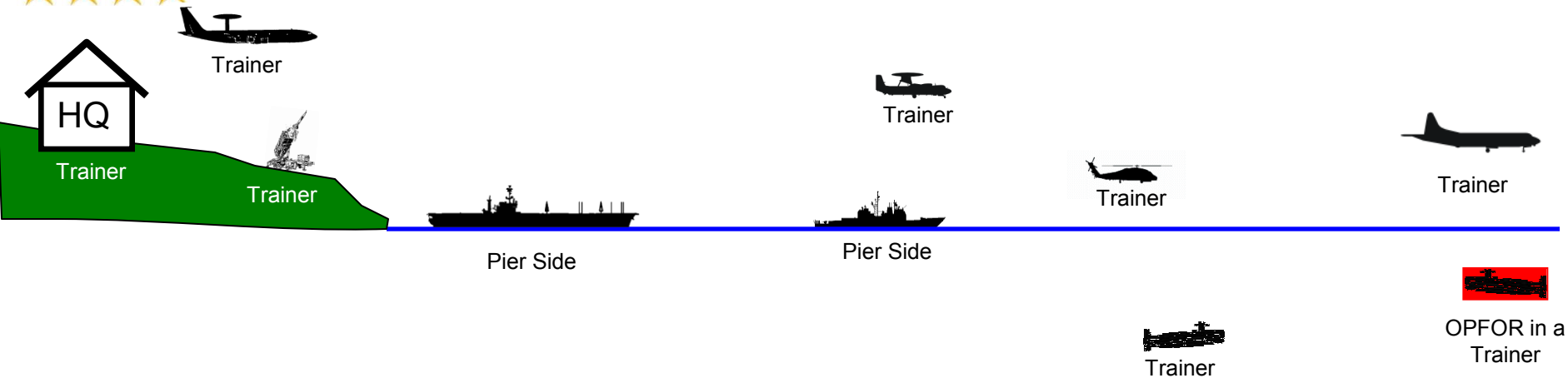
Train any time in any place
Employ all weapons
Rehearse prior to training at sea
Overcome tyranny of distance
Realistic OPFOR

Things We Couldn't Do Become Things We Can Do Via Fleet Synthetic Training

Our Emphasis is "Integrated" Training

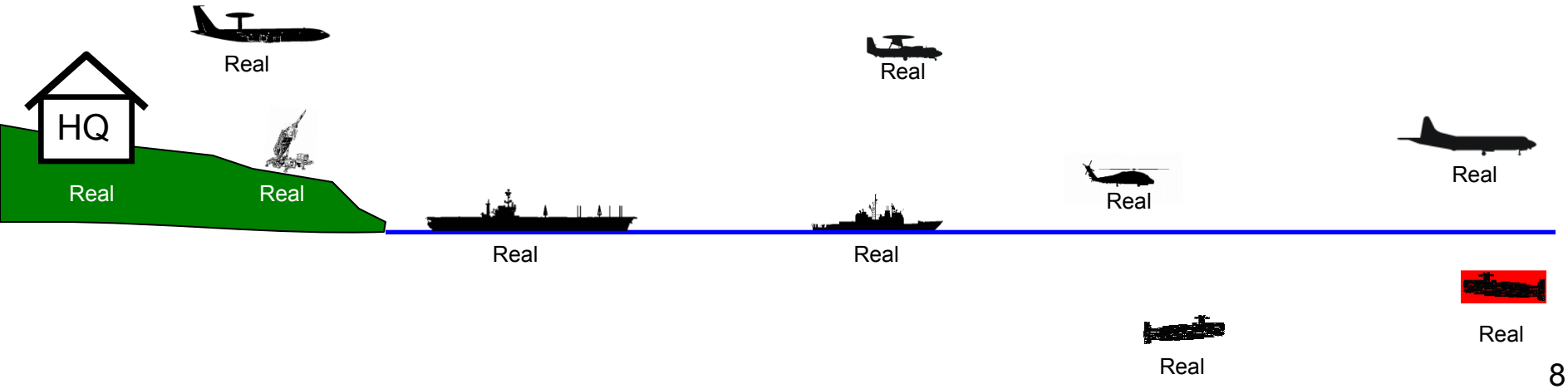
- Practice/challenge intended C2 over real world systems
- Realistic interoperability among all individuals, platforms, and staffs
- Practice what needs to be done as real as possible before it is done for real
- Practice Navy, Joint and Partner Nation interoperability
- Gain and sustain readiness against increasingly complex threats
- Diversify: PACFLT trains to PACOM, CENTCOM, SOUTHCOM, and EUCOM scenarios
- Increasing demand signal … synthetic training potential yet to be realized
- Admitting benefit and shifting investment … to synthetic training.

Practice Then Prove

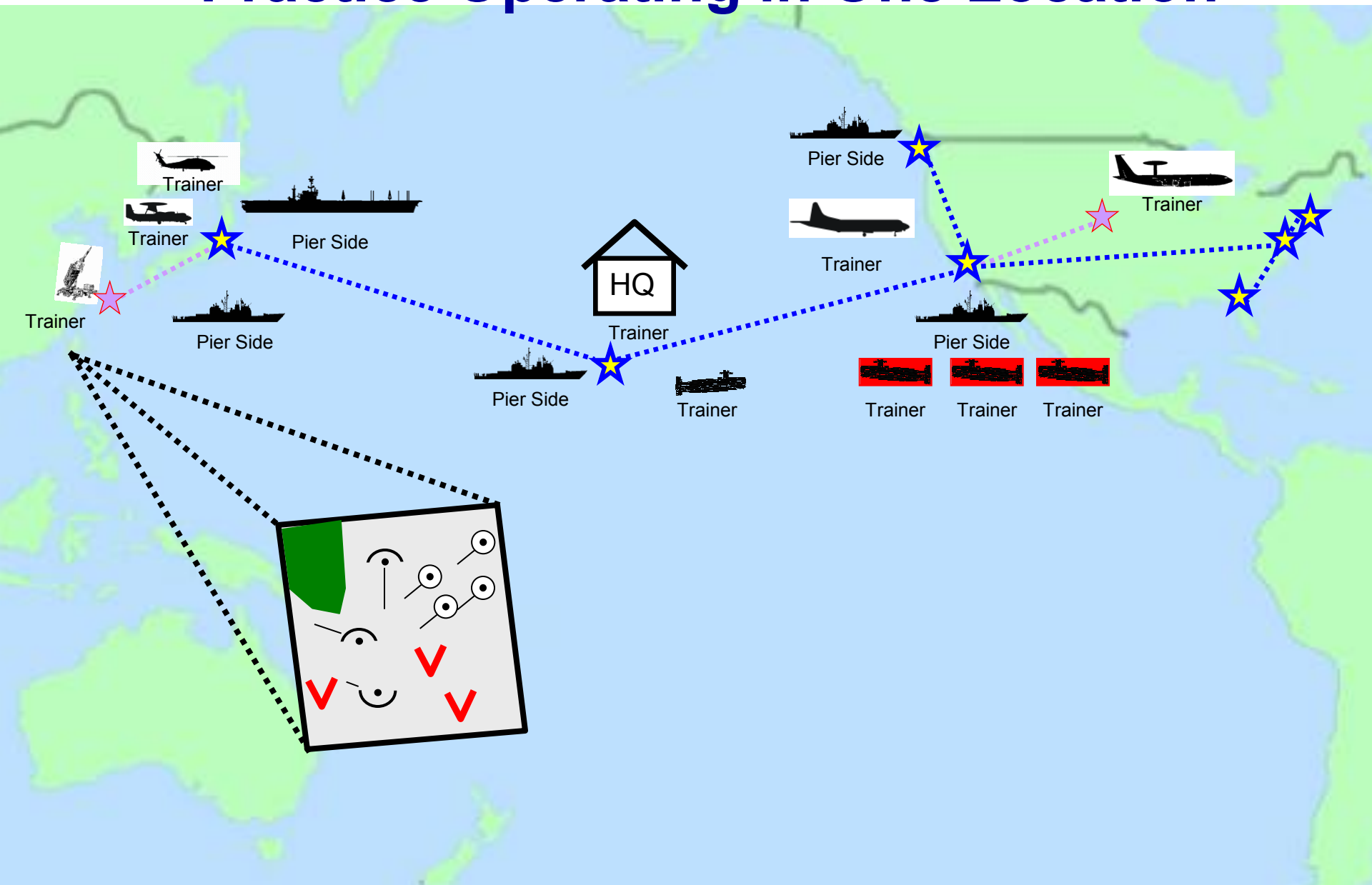


Fleet Synthetic Training - Practice

Live - Prove



Participants from Across the Globe Practice Operating in One Location



Seeking Research and Education Focusing to FST

- M&S: an important science within synthetic training (networks; interoperability; architectures; etc)
- Enable: enhance viability and prepare for inevitability of synthetic environments for training and operational readiness
- Deliver: leadership of the cadre delivering synthetic training
- Engage: future evolution of synthetic training
  - The “generational” thing … I’m in charge and over my dead body
  - The “been there done that” thing … wasn’t good enough when I did it
  - The “resources” thing … should/will synthetic replace what I have now
  - The other “generational” thing … I get it, it works, when can I have more
- Improve: effectiveness of the current and future synthetic environment in replicating the real world

Some Details

- DIS-HLA future ... And whatever other international standards and protocols are required
  - USAF staying DIS
  - Australia staying DIS
  - Navy pursuing HLA. Can/should we change
- Sharing Common Databases ... Timely, accurate, authoritative
- Solutions for cross domain information sharing ... Bilateral and multilateral
- Fidelity: Good enough? What must be as real as real? Break even?
  - How important the individual (console operator) to integrated training?
  - How important the integrated training (Commander) to the individual?
- How and why for merging live and synthetic ... What makes sense
  - Theory v reality for mission rehearsal
  - Safety seems to be an issue
  - Sustaining readiness on deployment
- Virtual to live radios and back. How to integrate the LVC world.
  - Live ships to synthetic trainers (FST)
  - Live aircraft to synthetic ships (NSAWC- Airwing Fallon)
- Missions that have no live training - BMD
  - How can the Navy BMD training integrate with the long standing Stratcom Synthetic training.
- Scheduling among multiple players ... Art and/or science
  - Is this just another Range?
  - Navy, Joint, Agency, and Partner Nation participants
- Break even point (cost/benefit) for expanding participation (among own Nation and/or with Partner Nations)
  - Criteria for assessment of viability to participate in Synthetic events
  - Indian and Pacific Oceans
- Hard enough explaining synthetic training to Partner Nation, but how support
  - Partner Nation's own development effort
  - Foreign Military Sales (FMS) to Partner Nation
  - Many parts and pieces: Simulation, Networking, and Training Systems interfaces
  - No one "system" that a Nation can develop or buy. The complexity of separate pieces (no single system or provider) for distributed, integrated, synthetic training.
- How bring non-kinetic into synthetic training?
- Effectively balancing the small but important stuff (counterpiracy) with the big and important stuff (ASW/BMD)
- Avoiding duplication but protecting training. If everyone can connect, how many separate synthetic training events make sense?
  - Training, qualifying and certifying individuals
  - Training, qualifying and certifying organizations
  - When to connect or when to keep separate
- Viability and/or inevitability of synthetic environments in relation to the future (relationships, threats, environments, resources, etc).
- Configuration control among constantly evolving capability improvements`